

**Remarks/Arguments:**

By this amendment claims 1, 9, 10, and 15 are amended, claims 20-25 are added; claims 1-25 are pending. Claims 1-19 currently stand rejected. Specifically, claims 1-13 are rejected under 35 U.S.C. §102, as being anticipated by Currie (5,178,537) and claims 10-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Himeno et al. (5,899,693) in view of Currie. In response to the present Office Action, the applicant has amended claims 1, 9, 10, and 15, and added new claims 20-25. Following the arguments advanced in this office action, it is believed that the present amendments to the claims generally conform the application to overcome the rejections. The applicant respectfully requests that the examiner reconsider and reexamine this application in view of the claim amendments made above and the following remarks.

The amendments to claims 1, 9, 10, and 15 find support within the specification. At [0001] the specification states, "this invention relates to ultrasonic dental scalers." Similarly, at [0016] the specification states that the present method "employs a pre-packaged, sterilized, single-use dental scaler tip... for use with an ultrasonic dental scaler." The addition of the term monolithic to claim 10 is supported by original claim 1. New claims 20-25 are also supported by the specification. At [0020], the specification discloses the use of material which deforms at conventional autoclave conditions. Also at [0020], the specification discloses that the plastic material may include a thermochromic indicator that permanently changes color at a predetermined temperature to indicate autoclave history. Thus, because both the amendments and new claims find support within the specification, no new matter has been added. Thus, upon entry of this response, claims 1-25 are pending.

**Rejections Under 35 U.S.C. §102**

Claims 1-13 currently stand rejected under 35 U.S.C. §102, as being anticipated by Currie (5,178,537). The Applicant has considered the rejection in view of the Examiner's comments and respectfully submits that Currie '537 does not anticipate the present claims, as amended, and thus the claims are allowable.

The law of anticipation requires that a single art reference teach, expressly or inherently, every limitation of the rejected claim. *Celeritas Techs., Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522 (Fed. Cir. 1998). The Applicant respectfully submits that Currie '537 fails to anticipate the present claim because it fails to teach all of the limitations of the present invention. Specifically, Currie fails to teach a disposable dental scaler tip for use with an ultrasonic dental scaler insert.

Referring initially to claim 1 as amended, the prior art does not teach a disposable dental scaler tip for use with an ultrasonic dental insert. Currie '537 teaches a disposable tip for use as a periodontal probe, which measures the periodontal pockets around a patient's teeth (column 3, lines 8-10). A dental scaler, on the other hand, is designed for the removal of calcium deposits on the patient's teeth, as claimed in the present application. Moreover, it is not possible to use the periodontal probe to decalcify teeth, nor is it possible to use a periodontal probe, as intended by Currie, by attaching the probe to an ultrasonic dental device.

Currie '537 similarly fails to disclose a method for attachment to an ultrasonic dental tool, as claimed in amended claim 1 of the present application. Currie discloses a method for attaching the periodontal probe tip onto an elongate, rigid handle, (column 3, lines 10-12). The present claim, as amended, states that the dental scaler tip comprises a coupling element for attachment to an ultrasonic dental insert. Thus, Currie '537 does not teach each of the elements claimed, so a

rejection based upon anticipation under 35 U.S.C. §102 would be improper. Because claims 2-8 depend from claim 1, contain all of the elements therein, and are narrowing in scope, Currie '537 does not properly anticipate any of them under 35 U.S.C. §102. Therefore, claim 1, and claims 2-8 that depend from it, should be allowed.

Referring now specifically to claim 6 of the present invention, the periodontal probe tip disclosed in Currie '537 further lacks threads for attachment. The opening of the rigid handle is threaded and the oversized, elongated end of the probe tip is forcibly secured by means of an interference fit (column 4, lines 53-56). The dental scaler tip in the present application, as claimed, has a threaded element, for example. Claim 1 states that the tip comprises, "a coupling element at a proximal end," and claim 6 states, "the coupling element comprises threads." Currie '537 does not disclose a tip having suitably threaded coupling elements. It would be readily apparent to the skilled artisan that the Currie coupling would not function properly in an ultrasonic tool. For the reasons stated above, claim 6 is not anticipated by Currie, and therefore should be allowed.

Referring now to claim 9, claim 10, and the claims 11-13 that depend from claim 10, Currie '537 does not teach all of the elements of these claims, as amended. As stated with respect to claim 1, Currie does not teach a dental scaler tip for attachment to an ultrasonic dental insert, as claimed by amended independent claims 9 and 10. Therefore, claim 9, claim 10, and the claims 11-13 that depend from claim 10, are not anticipated by Currie and should be allowed.

#### **Rejection Under 35 U.S.C. §103(a)**

Claims 10-19 are rejected under 35 U.S.C. §103(a) as unpatentable over Himeno et al. (5,899,693) in view of Currie (5,178,537). Himeno et al. discloses a method of using a disposable tip extension with an ultrasonic dental scaler comprising attaching the tip extension to a

conventional tip of a dental insert, and Currie discloses the forming and packaging of a disposable polymeric tip. To maintain a prima facie case of obviousness under 35 U.S.C. §103(a), the Examiner must show motivation, reasonable expectation of success, and that the prior art references teach or suggest all of the claim limitations. MPEP 706.02(j). The Examiner fails to cite a combination of references that teaches all the elements of claims 10-19 in the Applicant's pending application. In addition, Himeno et al. teach away from the invention of the present application.

With respect to claims 10-19, neither Himeno et al., Currie, nor any combination thereof teach all elements of the claims. The examiner suggests that Himeno et al. '693 teach a method of using a disposable tip by attaching the tip to a dental insert. However, Himeno et al. teach the use of dental tip attached to the distal end of a transmission medium, which is attached to an ultrasonic device. The transmission medium is essentially an extension located between the velocity transducer and the attached tip, creating a two-piece attachment system to the ultrasonic device. As described in claim 10, the device of the present application, as claimed, is monolithic (i.e. a single piece). The dental scaler tip of the present application is attached directly to the ultrasonic device creating ease of use, fewer parts that can fail, and fewer parts that need to either be cleaned or replaced. Because neither Himeno et al., Currie, or a combination thereof teach or suggest the insertion of the dental scaler tip directly into the ultrasonic device, rejection under 35 U.S.C. §103(a) is improper.

In addition, the system as described by Himeno et al. does not place the dental tip in a position to take full advantage of the ultrasonic device. As is known within the art, to achieve best performance in the use of the dental scaler attached to an ultrasonic dental device, it is preferable that the distal end of the attached tip be located at a vibration node, i.e. a location at which vibratory motion is at a maximum (See Feine, U.S. Pat. No. 6,164,698 column 4, lines 28-30 and column 6,

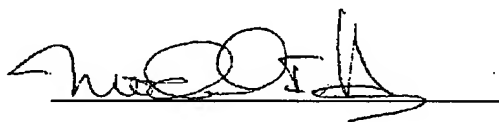
lines 11-14). Conversely, the proximal end of the attached tip (i.e. the point of attachment to the ultrasonic device) is preferably located at a vibration anti-node to reduce stress and failure at the point where the tip attaches to the velocity transducer. As taught by Himeno et al., the dental tip is attached to the device by an intermediate attachment, placing the proximal end of the tip at a vibratory node, and the working end of the tip away from the preferred node. The present application, on the other hand, is designed so that the tip attaches directly to the velocity transducer, and is thus able to take full advantage of the ultrasonic device by being attached at a vibratory anti-node with the tip located at a vibratory node. Attachment of the proximal tip end at an anti-node is important to minimize the stress at the connecting point. Because neither Himeno et al., Currie, or a combination thereof teach a dental scaler tip coupled directly to the ultrasonic device allowing the working tip of the scaler to be located at a vibratory node, rejection under 35 U.S.C. §103(a) is improper.

Furthermore, the combined references teach away from the invention of the pending application. Himeno '693 teaches that use of screw threads for mounting/demounting of the tip is troublesome and creates an ineffective time. Instead, Himeno teaches a dental tip that can be mounted/demounted by the motion of a single finger. Himeno further states that the protrusion located on the distal end of the dental scaler designed to secure the tip in place is small, and thus the tip is easily removed. The applicant, on the other hand, uses the threads to securely attach the tip to the ultrasonic device, preventing the loss of the scaler tip in the patient's mouth, and increasing the patient's safety. Because the Himeno reference teaches away from the present invention, rejection under 35 U.S.C. §103(a) is improper.

The foregoing amendments place the case in condition for allowance, raise no new issues and present no new matter. Accordingly, Applicant respectfully requests further examination of the application, as amended, reconsideration of the rejections, and allowance of the application.

The Commissioner is authorized to charge any fees associated with this communication to deposit account 501285. If the Examiner has any questions or comments regarding this communication, the undersigned can be contacted to expedite the resolution of this application.

Respectfully submitted,



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